

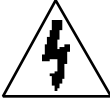


pm125/pm420
Professional Stereo Power Amplifier

Safety Information

	<p>CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN</p>	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL</p>		

 The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.


 The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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Introduction

pm125
pm420

Congratulations on your purchase of a new Carver Professional Power Amplifier. It is backed by state-of-the-art engineering and manufacturing techniques to bring you the best in quality craftsmanship and reliable performance. The pm125 and pm420 are specially designed for pro sound applications. Their rugged construction and low profile make them ideal for sustaining the abuses of the road with reliability and space-saving economy. And their accurate sound and ample power make them ideal for critical studio applications as well. The pm125 is rated at 62 watts per channel into 4 ohms and 50 watts per channel into 8 ohms. In bridged mono operation it is rated at 125 watts into 8 ohms. The pm420 is rated at 210 watts per channel into 4 ohms and 135 watts per channel into 8 ohms. In bridged mono operation it is rated at 420 watts into 8 ohms. The sophisticated protection circuits designed into these amplifiers will protect your system should an unexpected fault occur. They also protect the amplifiers from excessive temperature, continuous current limiting and shorted outputs. The balanced input uses a high quality, high common-mode rejection differential amplifier for exceptional hum and noise rejection. These power amplifiers were designed and manufactured by people with a lifetime commitment to providing the world's finest components for music and sound reproduction. Thanks for placing your confidence in Carver Professional. We know your amplifier will provide many years of dependable service and reliable sound reproduction.

Unpacking and Paperwork

Carefully unpack the amplifier and keep the original carton and packing materials for future moving, shipment or long-term storage. After opening the box, please check for any visible signs of damage that were not apparent from the outside of the box. If you do encounter what appears to be concealed damage, please consult your Carver Professional Dealer before installing the unit.

Important Paperwork

Make sure to save your sales receipt. Your receipt is extremely important to establish the duration of your Limited Warranty and for insurance purposes. Next, make a note of the serial number which is located on the back of the amplifier. Record it in the space provided below for convenient reference.

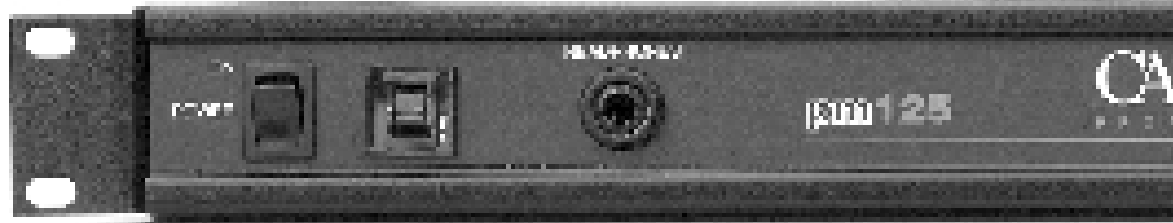
Model _____ pm125 _____ pm420

Serial Number: _____

Purchased at: _____

Date: _____

Finally, take a moment to fill out and return the Warranty Registration Card packed with the amplifier and return it to Carver Professional. This will allow us to keep you informed about new products as they become available.

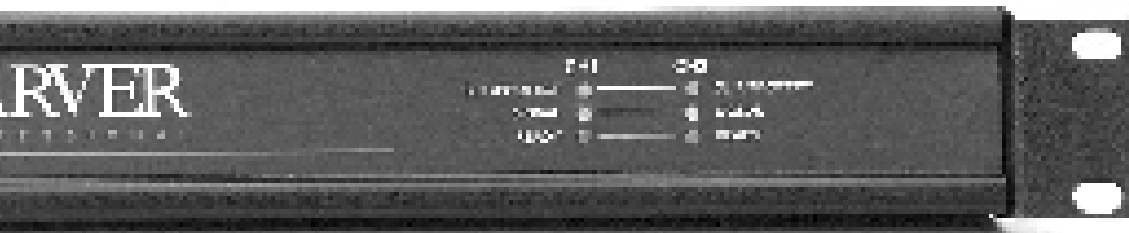


pm125

FEATURES

- 50W per channel into 8 ohms
62W per channel into 4 ohms
125W mono into 8 ohms
- 1/4-inch TRS input jacks
- Accepts balanced or unbalanced lines
- Multi-way binding post output connectors
- Independent 11 detent Level Controls for CH1 & CH2
- Dual Mono mode for operating both channels with a mono signal
- Bridged Mono mode for combining the power of both channels into a single higher-powered channel
- Input sensitivity set at 1.5V RMS from factory. Internally reconfigurable to 0.775V RMS.
- Internal jumpers to bypass Left and Right Channel Level Controls
- Independent CH1/CH2 speaker relays will instantaneously disconnect if one of the following fault conditions is detected:
 - D.C. Offset
 - Over Temperature
 - Short Circuit
- Additional protection circuitry includes:
 - Clipping Eliminator
 - Resettable Circuit Breaker
- Power Ready, Signal Present and Clip/Protect indicators for each channel
- Headphone jack
- Convection cooled
- 70V transformer option
- CE 1997 approved





pm125
pm420

SPECIFICATIONS

Continuous Average Output Power, both channels driven:

50 watts per channel into 8 ohms at 1kHz, with no more than 0.1% THD

62 watts per channel into 4 ohms at 1kHz, with no more than 0.1% THD

Bridged-mono operation:

125 watts into 8 ohms at 1kHz, with no more than 0.1% THD

Dynamic Headroom:

>2dB

Frequency Response:

20Hz to 20kHz (±0.75dB)

Channel Separation:

>55dB @ 1kHz

Damping Factor:

<400

Input Impedance:

22 Kohms unbalanced,

44 Kohms balanced

Sensitivity:

Low: 1.5VRMS for rated power into 4 ohms at 1kHz, 193mVRMS for 1W into 4 ohms @ 1kHz
High: 0.775VRMS for rated power into 4 ohms @ 1kHz, 100mVRMS for 1W

Signal-to-Noise Ratio:

>100dB, A-weighted, referenced to rated power into 4 ohms

Headphone Output:

3.0V

Slew Rate: >10V/μS
CMRR: >40dB @ 1kHz
Power Consumption: 250W at full power into 4 ohms (continuous)

Power Requirements:

RMS into 60 (150mW) 11.3VRMS into 600 (213mW)
120VAC/60Hz (USA and Canada) Other voltages as required for export

Display:

3 LED indicators per channel: READY, SIGNAL, CLIP/PROTECT

Size (H x W x D):

1.75" (1U) x 19" x 13.25" 44mm x 483mm x 337mm

Net Weight:

13.8 lbs. (6.3 kgs)

Shipping Weight:

17 lbs. (7.73 kgs)

Due to ongoing continuous product development features, specifications, and availability are subject to change without notice.



pm420

FEATURES

- 135W per channel into 8 ohms
210W per channel into 4 ohms
420W mono into 8 ohms
- 1/4-inch TRS input jacks
- Accepts balanced or unbalanced lines
- Multi-way binding post outputs
- Independent 11 detent Level Controls for CH1 & CH2
- Dual Mono mode for operating both channels with a mono signal
- Bridged Mono mode for combining the power of both channels into a single higher-powered channel
- Input sensitivity set at 1.5V RMS from factory. Internally reconfigurable to 0.775V RMS.
- Internal jumpers to bypass Left and Right Channel Level Controls
- Independent CH1/CH2 2 Speaker relays will instantaneously disconnect if one of the following fault conditions is detected:
 - D.C. Offset
 - Over Temperature
 - Short Circuit
- Additional protection circuitry includes:
 - Clipping Eliminator
 - Resettable Circuit Breaker
- Power Ready, Signal Present and Clip/Protect indicators for each channel
- Convection cooled
- 70V transformer option
- CE 1997 approved



SERVER

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

pm125
pm420

SPECIFICATIONS

Continuous Average Output Power, both channels driven:
135 watts per channel into 8 ohms from 20Hz to 20kHz, with no more than 0.1% THD
210 watts per channel into 4 ohms at 1kHz, with no more than 0.1% THD

Bridged-mono operation:
 420 watts into 8 ohms at 1kHz, with no more than 0.1% THD

Dynamic Headroom:
 1.4dB @ 4 ohms

Frequency Response:
 20Hz to 20kHz (± 0.75 dB)

Channel Separation:
 >55 dB @ 1kHz

Damping Factor:
 <400

Input Impedance:
 22 Kohms unbalanced,
 44 Kohms balanced

Sensitivity:
Low: 1.5VRMS for rated power into 4 ohms at 1kHz
 106mVRMS for 1W into 4 ohms @ 1kHz
High: 0.775VRMS for rated power into 4 ohms @ 1kHz,
 55mVRMS for 1W into 4 ohms @ 1kHz

Gain:
High: 31.2dB (± 0.5 dB)
Low: 25.5dB (± 0.5 dB)

Input Overload:
 $+18$ dB μ

IM Distortion:
 $<0.1\%$

Signal-to-Noise Ratio:
 >100 dB, A-weighted, referenced to rated power into 4 ohms

Slew Rate:
 >10 V/ μ S

CMRR:
 >44 dB @ 1kHz

Power Consumption:
 1000W at full power into 4 ohms

Power Requirements:
 120VAC/60Hz (USA and Canada) Other voltages as required for export

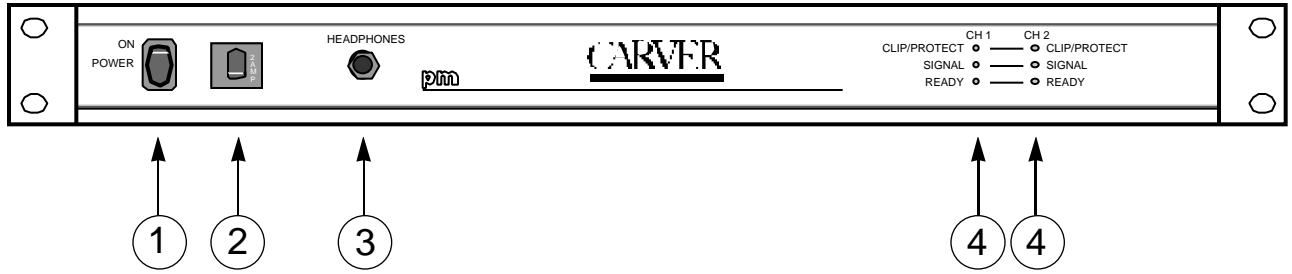
Display:
 LED ladder, 3 indicators per channel: READY, SIGNAL, CLIP/PROTECT

Size (H x W x D):
 3.50" (2U) x 19" x 13.25"
 89mm x 483mm x 337mm

Net Weight:
 23.8 lbs. (10.8 kgs)

Shipping Weight:
 28 lbs. (12.73 kgs)

Due to ongoing continuous product development features, specifications, and availability are subject to change without notice.



Controls And Functions

1. POWER SWITCH

When this switch is engaged, the power turns ON and the READY indicators illuminate. Be sure all connections are made and double-checked before switching the power amplifier on.

2. CIRCUIT BREAKER

This protection device will trip if the line current exceeds the rating of the circuit breaker, causing the amplifier to shut down completely. This operates the same as a standard line fuse, except that it is resettable from the front panel after cooling down for a few seconds.

3. HEADPHONES (PM125 ONLY)

All conventional dynamic headphones may be plugged in here. Headphone impedance may range from a few ohms to several thousand ohms, although output level will vary depending on the impedance. The HEADPHONES output is tapped directly off of the Speaker Output terminals and is therefore affected by the setting of the LEVEL controls on the rear panel.

Note: Do not use headphones when the amplifier is switched to Bridged Mono operation. The left channel (CH1) will be out of phase with the right channel (CH2).

4. CH1/CH2 STATUS INDICATORS

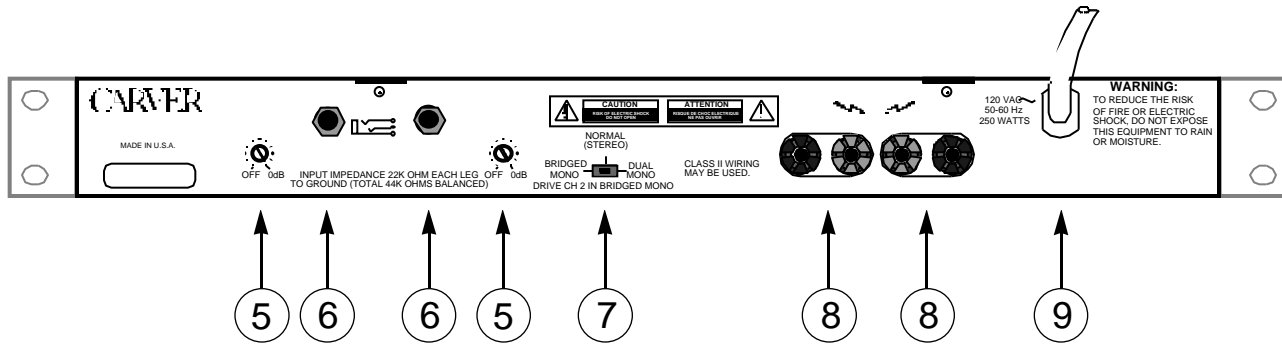
These LEDs display information about the operation of the amplifier.

READY – These LEDs illuminate green when the power is on and the amplifier is ready to operate. The READY LEDs illuminate red when the power switch is first turned on (while the power supply is stabilizing prior to the speaker output relays switching in), or when the amplifier is in protect mode.

SIGNAL – These LEDs illuminate yellow when a signal is present at the Speaker Output jacks to provide an indication of output power relative to full power (0dB).

CLIP/PROTECT – These LEDs illuminate red when the power switch is first turned on, when the output begins to clip, or whenever there is a fault condition detected that causes the output relay(s) to disengage. These fault conditions include excessive DC Offset, excessive heatsink temperature and short circuits at the speaker output(s).

Note: The relays operate independently for each channel. Therefore, it is possible for one channel to operate normally while the other is in “protect” mode.



pm125
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5. CH1/CH2 LEVEL CONTROLS

These controls are used to adjust the input level of each channel. When the controls are fully clockwise the amplifier operates at maximum gain. Turning the controls counter-clockwise attenuates the input signal. The LEVEL controls can be bypassed by moving the jumpers located at J15 and J16, next to the LEVEL pots on the amplifier's main circuit board. Plugging the jumper leads into sockets 1 and 2 will bypass the LEVEL controls, locking the amplifier into full gain (as if the LEVEL pots were fully clockwise). The depth of the LEVEL controls can be changed by physically removing the pots from the amplifier board and moving them to a second set of holes in the board. In this way they can either protrude from the chassis for easy adjustment, or be recessed to protect the controls from inadvertently being moved once they are set.

CAUTION: To avoid the risk of electric shock, refer all internal adjustments to qualified service personnel.

6. CH1/CH2 INPUT CONNECTORS

These are 1/4-inch TRS (Tip-Ring-Sleeve) phone jacks. They can be used with balanced signals or unbalanced signals (see Input Wiring on page 9 for more information).

7. STEREO/MONO SWITCH

This switch is used to select between NORMAL STEREO operation, DUAL MONO operation or BRIDGED MONO operation. For NORMAL STEREO operation, use CH1 and CH2 inputs. For DUAL MONO or BRIDGED MONO operation, use CH2 input only (see page 10 and page 11 for more information).

8. CH1/CH2 SPEAKER OUTPUTS

Multi-way binding posts are used to connect loudspeakers to the amplifier outputs. The red terminals are the signal connection (+) and the black terminals are the signal return connection (-). The black terminals are internally tied together and to signal ground.

9. POWER CORD

Connect to a properly configured outlet providing the line voltage specified for your model.

Installation

Location and General Precautions

Observe the following precautions when choosing a location for your amplifier.

A. Do not expose the unit to rain or moisture. If a fluid or foreign object should enter the unit, disconnect the power plug and contact an authorized dealer or service center. Do not pull out the plug by pulling on the cord; grasp the plug firmly.

B. Protect from heat and allow adequate ventilation. Place away from direct sources of heat, such as heating vents and radiators. All components produce some heat during operation, so make sure that the ventilation holes are not covered and that air is allowed to circulate freely behind, beside and above the unit. Excessive heat is the single greatest source of both short-term and long-term component failure.

Mechanical Considerations

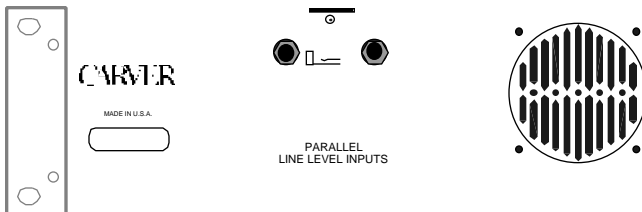
The pm125 requires one rack space (1.75"), while the pm420 requires two rack space units (3.5") and a depth of 13.25" inside the rack, including the rear supports. Secure the unit mechanically using four screws with washers to prevent marring the front panel. Neoprene rubber washers are a good choice because they grip the screw head and prevent them from backing out when vibrated or transported.

Rear Support for Road Applications

If the pm125 or pm420 is rack mounted and the rack is transported, mechanical support for the rear of the amplifier is required. This could take the form of a shelf across the rear of the amplifier or brackets that engage the rear of the unit. This practice is recommended for all electronic instruments.

Thermal Considerations

When the pm125 or pm420 are used in a free standing configuration, no thermal considerations are necessary other than keeping the ventilation holes open. If the amplifiers are rack mounted, ensure that adequate ventilation exists around the sides of the amplifier. When several amplifiers are mounted together in a rack, you may need to provide air inlets from the outside of the rack. The pm125 and U.S. versions of the pm420 are convection cooled. Export versions of the pm420 contain a fan that is mounted on the rear panel. It draws in air from the rear and exhausts it out the front, which provides additional cooling for internal components. The pm125 and pm420 may be stacked directly on top of each other without spacer panels. If the amplifiers are used with other amplifiers, ensure that the heat output from the other amplifiers doesn't interfere with the ventilation of the pm125 and pm420 (or vice versa).



AC Power Considerations

Ensure that the pm125 or pm420 is plugged into an outlet capable of supplying the correct voltage specified for your model and enough current to allow full-power operation of all the amplifiers plugged into it. The current demand of a power amplifier varies depending on several factors, including the impedance of the load, the output level of the amplifier, and the crest factor and duty cycle of the program material. Under typical conditions reproducing rock music, with both channels driven into a 4 ohm load to the point where musical peaks are just at the clipping point, the amplifiers require the following average currents:

pm125: 2 amps for 120V versions, 1 amp for 230V versions

pm420: 10 amps for 120V versions, 5 amps for 230V versions

Magnetic Leakage Considerations

The pm125 and pm420 may be mounted without concern for magnetic flux leakage, within the confines of common sense. For example, it's not a good idea to mount any power amplifier near a microphone input transformer or magnetic storage media.

Input Wiring

The 1/4-inch phone jacks (XLR connectors on pm420 export versions) for the input signal can be used with either unbalanced 2-conductor or balanced 3-conductor cables. Use shielded coaxial cable to conduct the signal from the source (i.e. mixer, equalizer, CD player) to the amplifier.

For balanced operation:

U.S. Version: Use a 3-conductor TRS 1/4" phone plug. The tip of the plug carries the (+) (hot, non-inverting) side of the signal, the ring carries the (-) (low, inverting) side of the signal, and the sleeve is ground (see Figure 3A).

Export Version: Use a male XLR connector. Pin 2 carries the (+) (hot, non-inverting) side of the signal, Pin 3 carries the (-) (low, inverting) side of the signal, and Pin 1 is ground (see Figure 3B).

For unbalanced operation:

U.S. Version: Use a 2-conductor (Tip-Sleeve) 1/4" phone plug. The tip of the plug carries the signal and the sleeve is ground. The ring connection in the jack is automatically grounded by the sleeve (see Figure 4A).

Export Version: Use a male XLR connector. Pin 2 carries the signal and Pin 1 is ground. Short Pin 3 to Pin 1 in order to reference the input differential amplifier for the correct gain. Failure to do this will result in a loss

of gain (see Figure 4B). For all versions of the amplifiers, the gain remains the same regardless of whether the input is balanced or unbalanced.

Note: The polarity of the balanced inputs can be reversed by changing four jumpers on the Main Board near the barrier strip inputs. Cross wire JP103 and JP104 to change the input polarity of CH1 and cross wire JP101 and JP102 to change CH2.

CAUTION: To avoid the risk of electric shock, refer all internal adjustments to qualified service personnel.

Input Sensitivity

The input sensitivity of the amplifiers are set at the factory to 1.5VRMS for rated output. The input sensitivity can be changed to 0.775VRMS by adding two jumpers on the Main Amplifier Board. See page 14 of this owner's manual for more information.

Output Wiring

For Normal Stereo or Dual Mono operation, use the red and black binding posts associated with each channel. These are multi-way binding posts that can be used with standard single or double banana connectors, bare wire (up to 8 gauge) or spade lugs.

Use heavy-gauge wire for speaker connections. The greater the distance between the amplifier and the speakers, the larger the diameter the wire should be to minimize power losses across the wire and improve the damping of the speaker. Wire thickness specifications, or gauges, get larger as the wire gets thinner; thus 14-gauge wire is thicker than 18-gauge wire. Use the following chart as a guide:

Wire Length	Gauge of Wire
Up to 8 ft.	18 gauge
Up to 12 ft.	16 gauge
Up to 20 ft.	14 gauge
Up to 30 ft.	12 gauge
Up to 50 ft.	10 gauge

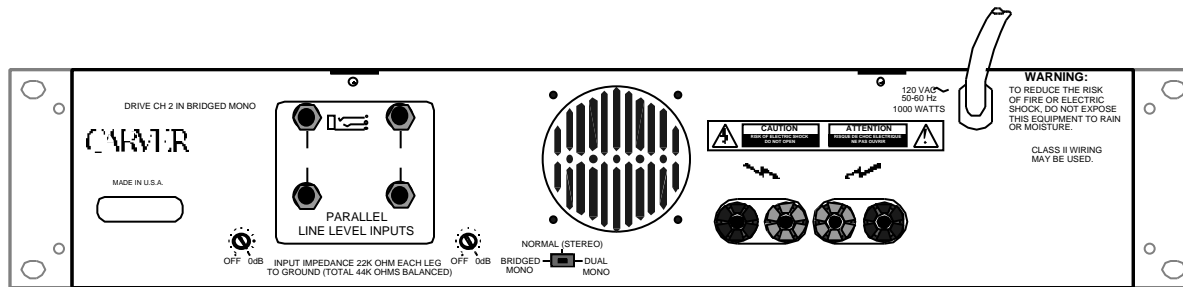
This will insure that the resistance of the speaker wire is less than 2.5% of 4 ohms, resulting in a transmission loss of less than 0.1dB. Class II (NEC) wiring can be used.

Polarity

Loudspeakers must be connected with consistent polarity for correct phasing between them. Incorrect phasing will do no physical harm, but frequency response will be affected. The key is to make sure that both speakers connected to the speaker terminals are hooked up the same way. Connect (-) at the speaker outputs to (-) on the back of the speaker, and (+) at the speaker outputs to (+) on the back of the speaker.

Dual Mono

For dual-mono operation, turn the amplifier off and move the Stereo/Mono switch to the DUAL MONO position. Connect the input signal to CH2 input (CH1 input becomes disabled). Connect the speakers to the Speaker Outputs on the amplifier in the same way that you would for normal stereo operation. Both speaker outputs will carry the signal that is connected to the CH2 input.



Bridged Mono

For bridged-mono operation, turn the amplifier off and move the Stereo/Mono switch to the BRIDGED MONO position. Connect the input signal to CH2 input (CH1 input becomes disabled). Connect the speaker(s) to the two (+) speaker terminals. The CH2 red post is the hot (non-inverting) side, and the CH1 red post is the low (inverting) side (see Figure 6).

When connected in this way, each channel “sees” one-half the impedance of the speaker that is connected between them. If an 8 ohm speaker is used, each channel will see a 4 ohm load. Therefore it is not recommended that anything lower than 8 ohms be connected in this mode of operation. Use Parallel Mono operation for lower impedances.

Note: Be sure to set both of the input level controls to the exact same setting for equal power distribution per channel.

Note: In bridged mono operation, the output connections are actually a balanced output configuration. This means that neither output terminal may be grounded (both have voltage present).

Caution: Extreme care must be taken if using 1/4” phone plugs as speaker connectors with the amp in bridged-mono mode. The reason for this is when connected to a bridged-mono output, the shell of the plug is “hot” and could cause a nasty surprise if it comes in contact with something or someone that is grounded. If you must use phone plugs at the speaker connection, at least insulate the shell of the plug with shrink sleeving.

Parallel Mono

Parallel-mono operation is useful when you are running sustained high levels into a single load, or when driving a low impedance load. To configure the amplifier for parallel-mono operation, contact Carver Professional Technical Service Department for Field Application Bulletin pm125-1. It contains detailed instructions describing the simple procedure for modifying both the pm125 and pm420 power amplifiers for parallel-mono operation.

Clipping Eliminator

This circuit prevents the input signal from exceeding the point where it would drive the amplifier into hard clipping. It has no effect on the signal until it reaches the point where clipping would occur. The larger the input signal the more the signal is reduced to keep the output just below clipping. The Clipping Eliminator circuitry is inactive when the unit is shipped from the factory, but can be activated by installing jumpers in sockets JP9 and JP6 (see instructions on page 13).

Note: If the Input Level control(s) are turned down far enough, a sufficiently large input signal can drive the input differential amplifier into clipping. The Clipping Eliminator circuit cannot remedy this kind of clipping. Likewise, it has no effect on clipping that occurs prior to the amplifier inputs (at the mixer or equalizer stage, for example).

Operating Tips

Using the pm125/pm420

Once the amplifier has been installed and wired into the system, you are ready to use it. Here are some tips to help you get the most from it.

- Verify that the Stereo/Mono switch has been set to the mode that you want.
- When you power the system up for the first time (out of the carton), it's a good idea to start with all of the amplifier level controls turned down, then advance them slowly, one at a time, so that you can confirm that each amplifier channel is operating normally.
- Be sure that the Input Level controls are set sufficiently high to allow the preceding device to drive the amplifier to full output. For most installations, this is wide open (fully clockwise).
- Once you have established settings, it is a good idea to mark them down, either on paper, or on pieces of tape or sticky-dots attached to the amplifier's panel.
- In bi-amplified (multi-amp) systems, it is a good idea to start with the low-frequency amplifiers turned off or down, and to check each frequency range from highest to lowest to ensure that each loudspeaker component is operating correctly.

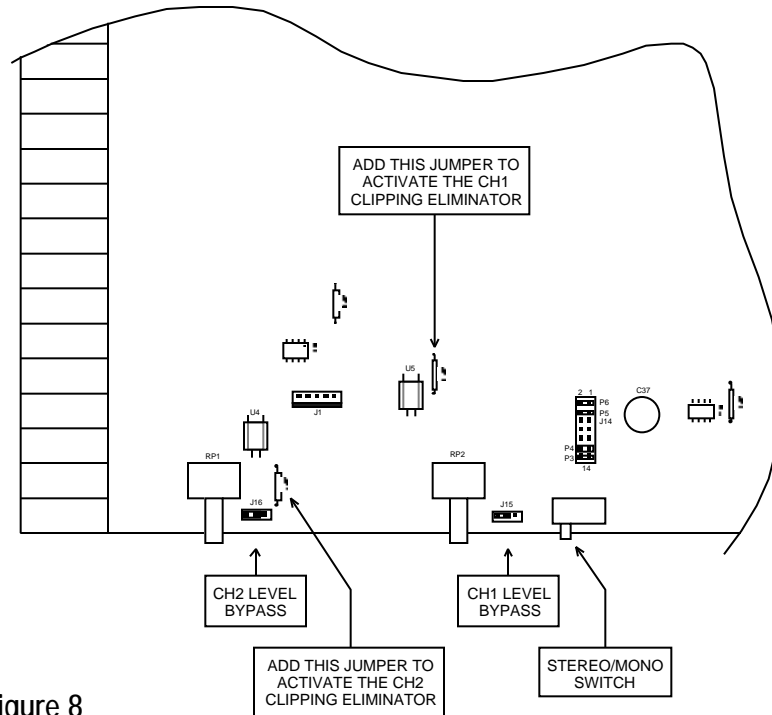


Figure 8

Servicing Instructions

CAUTION: To reduce the risk of electric shock, do not perform any servicing other than that contained in the Operating Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

Stereo/Mono Switch

The Stereo/Mono Switch is located on the amplifier's main circuit board (see Figure 8) and accessible from the back panel. Leave the switch centered for normal stereo operation, move it to the left for Bridged Mono operation, and move it to the right for Dual Mono operation.

Level Defeat Jumpers

The Level controls can be bypassed by moving the jumpers for CH1 and CH2 (J15 and J16), which are located on the amplifier's main circuit board near the level adjustment pots (see Figure 8). This will lock the amplifier into full gain (as if the Level pots were fully clockwise).

Input Sensitivity Modification

The input sensitivity of the amplifier is set at the factory to 1.5VRMS for rated output. To increase the sensitivity by 6dB to 0.775VRMS, install jumpers JP1 (CH1) and JP11 (CH2). Sockets for these jumpers are located on the amplifier's main circuit board (see Figure 9).

Input Polarity

The XLR input connectors on the pm125/pm420 are shipped from the factory with pin 2 hot (+), as indicated on the rear panel. The polarity of the balanced inputs can be reversed by changing four jumpers located on the amplifier's main circuit board. Crosswire JP3 and JP4 to change the input polarity of CH1 and crosswire JP101 and JP102 to change CH2 (see Figure 8).

Clipping Eliminator Activation

The clipping eliminator circuit can be activated by installing jumpers in sockets JP9 (CH1) and JP6 (CH2) (see Figure 8).

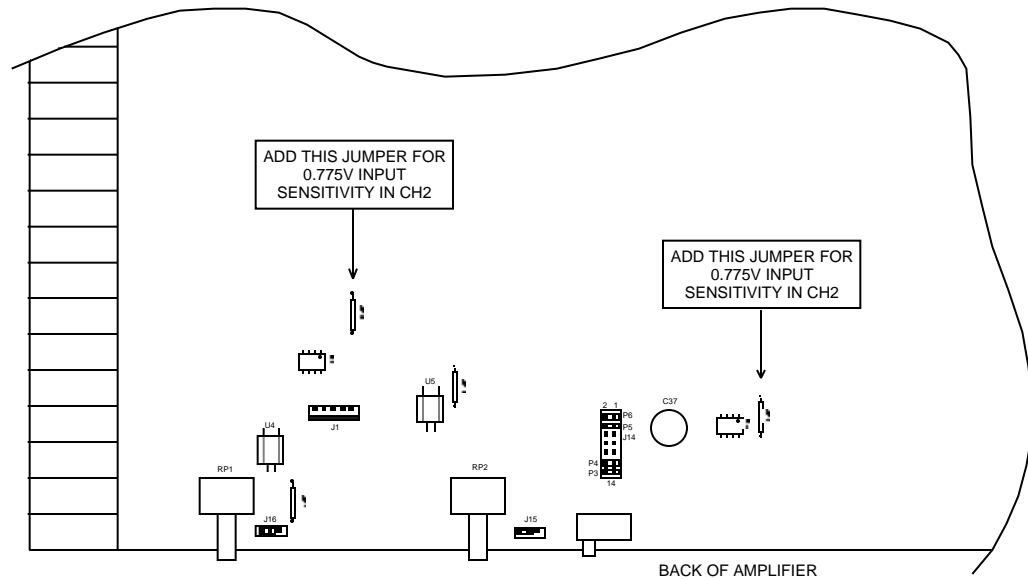


Figure 9

In Case of Difficulty

If you're having trouble or suspect a problem with the pm125/pm420, try some simple troubleshooting before contacting an Authorized Carver Professional Service Center.

No Sound, No Power

This is usually an indication of a power supply problem, either the power line itself or the amplifier's power supply.

1. pm125/pm420 power is switched off.
2. Linecord is disconnected.
3. Poor fit between the plug and AC receptacle.
4. Power off at AC receptacle (check with tester or lamp).
5. The amplifier is plugged into a switched outlet. Verify that the outlet is live.
6. The pm125/pm420's circuit breaker has tripped. Reset the Breaker.

Power On, Low Output or No Output

Low or no output problems are usually signal-source, bad cable or partial output short circuit related. If the items listed below check out, then the problem may be internal to the pm125/pm420.

1. The Input Level controls are set too low.
2. Move the input connections to another amplifier that you know is working to verify that it is not a source problem.
3. Check the speaker connections. Be sure that there are no small strands of wire touching similar strands coming from the other wire in the cable.
4. Make sure the speakers are functioning correctly.
5. If you are using bridged-mono mode, ensure that the Stereo/Mono switch is set correctly.
6. Use a voltmeter to determine if the power line voltage is dropping excessively when the amplifier is driven hard.

Playback Is Mixed with Hum

1. Check or replace the connecting cables.
2. Make sure that each screw terminal connection is tight.
3. Signal cables may have been routed too closely to AC cables, power transformers, motors or other EMI inducing device.
4. Try connecting another source to the power amplifier inputs. If the hum stops, the problem lies with the original source component.

m125
pm420

Distortion

Distortion is usually caused by excessive loss in the input controls (the mixer/equalizer/crossover can't produce enough output), overdriving resulting in output clipping, or current limiting caused by excessively low load impedances.

1. Check the setting of the Input Level controls. If set too low, the preceding piece of equipment may not have sufficient output to overcome the loss.
2. Check the speaker connections and verify that all screw connections are tight and that there are no stray strands of wire to cause short circuits.
3. Verify that the total load impedance presented to the amplifier is within the limits described in this manual for the mode of operation selected.

Care and Service Assistance

Care: Wipe off the pm125/pm420's front panel and chassis from time to time with a soft, dry cloth. If you have something stubborn to remove, use a mild dish soap or detergent sparingly applied to a soft cloth. Don't use alcohol, ammonia, or other strong solvents.

Service Assistance: We suggest that you read the Limited Warranty completely to fully understand your warranty/service coverage. Please promptly complete and return the Warranty Registration Card. Also be sure to save the sales receipt in a safe place. It will be necessary for warranty service. If your CARVER Professional product should require service, you may contact the CARVER Professional Technical Service Department by calling (503)978-3363 or by writing to us at the factory address shown below. We will then direct you to the nearest in our national network of Authorized Warranty Service Centers or give you detailed instructions on how to return the product to us for prompt action. If you should have questions or comments, please write to the factory address given below. Please include the model and serial number of your Carver Professional product, your complete address and a daytime phone number.

Carver Professional
Service Department
P.O. Box 83189
Portland, OR 97283

Phone (503)978-3363 • Fax (503)978-3302

Carver Professional reserves the right to improve its products at any time. Therefore, specifications are subject to change without notice.

Warranty Information

Professional Power Amplifiers: 5 years

WHAT IS COVERED:

THIS WARRANTY COVERS DEFECTS IN MATERIAL AND WORKMANSHIP ONLY. This limited Warranty DOES NOT extend to: 1) Damage caused by shipment, 2) damage caused by accident, misuse, abuse, failure to perform owner maintenance, or operation contrary to the instructions in the Carver Professional owner's manual, 3) units on which the serial number has been defaced, modified or removed and 4) damage resulting from modification or attempted repair by any other person than authorized by Carver Professional.

WHAT WE WILL PAY FOR:

Carver Professional will pay all labor and material expenses for items covered under this Limited Warranty. See the next section concerning shipping charges.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE:

In the event your Carver Professional product requires service, contact your Carver Professional authorized dealer/contractor or contact Carver Professional (ATTN: Customer Service Dept.) 9300 N. Decatur, Portland, OR 97203 or call the Customer Service Department directly at (503) 978-3363. You will be directed to an Authorized Carver Professional Service Station or receive instructions to ship the unit to the factory. Please save the original shipping carton and packing materials in case shipping is required. **Please do not ship Parcel Post.** Include a complete description of the problem, the associated components and connections, and a copy of the purchase receipt. Initial shipping costs are not paid by Carver Professional. Return shipping costs will be pre-paid if repairs were covered by the scope of this warranty.

YOU MUST RETAIN AND PROVIDE YOUR SALES RECEIPT TO OBTAIN COVERAGE UNDER THIS LIMITED WARRANTY.

The warranty Period begins from the date of first consumer purchase from an Authorized Carver Professional Dealer. **LIMITATIONS OF IMPLIED WARRANTIES:** All implied warranties for merchantability and fitness for a particular purpose are limited in duration to the warranty period for your product, unless otherwise provided by the state law.

EXCLUSION OF CERTAIN DAMAGES:

In no event shall Carver Professional be liable for property or any other incidental or coincidental damages which may result from the failure of this product. If your Carver Professional product proves defective in material or workmanship, the liability of Carver Professional shall be limited to the repair or replacement, at the option of Carver Professional, of any defective part.

STATE LAWS MAY DIFFER:

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

OTHER IMPORTANT PROVISIONS:

Carver Professional reserves the right to make changes in design and improvements to its products without the responsibility of installing such changes to improvements on products previously sold by Carver Professional. We suggest that you attach your purchase receipt to this Warranty and keep both documents in a safe place. Thank you for your choice of a Carver Professional Amplifier.

NOTE:

The following warranty is exclusive to the United States and its possessions and territories. Please see your Carver Professional dealer or distributor for the correct warranty information in your area or locale.

Notes

pm125
pm420

DECLARATION OF CONFORMITY

We PHOENIX GOLD INTERNATIONAL, INC.

(supplier's name)

9300 N. DECATUR, PORTLAND, OR 97203 USA

(address)

declare under our sole responsibility that the product

pm125/420

(name, type or model, lot, batch or serial number, possibly sources and numbers of items)

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

EN55013, EN55020, EN60065

(title and /or number and date if issue of the standard(s) or other normative document(s)

(if applicable) following the provisions of

89/336/EEC/73/23 EEC

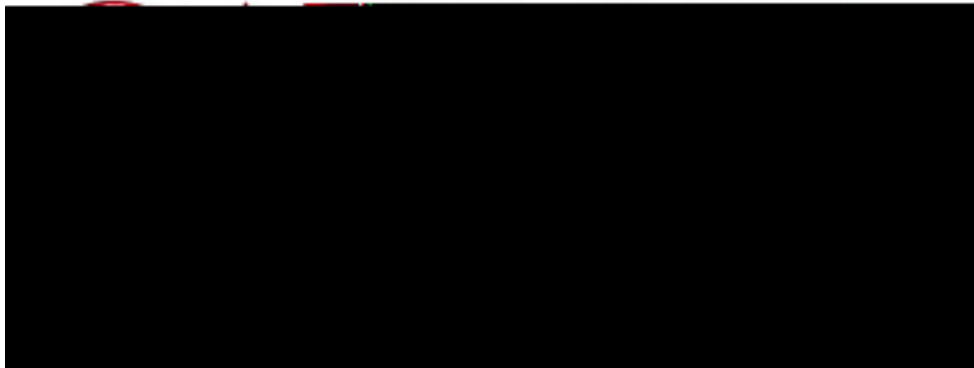
Directive

PORTLAND, OR USA April 25, 1997

(Place and date of issue)



(name and signature or equivalent marking of authorized person)



180 DAY
Performance
Guarantee



5 Year
Warranty

A Division Of Phoenix Gold International, Inc.

9300 North Decatur • Portland OR 97203 • Tel: 503.288.2008 • Fax: 503.978.3302